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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/311,617 05/13/99 TOWNSHEND

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020306 TM02/0508  
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EXAMINER

DORVIL, R

ART UNIT

PAPER NUMBER

2641

DATE MAILED:

05/08/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/311,617

Applicant(s)

TOWNSHEND, BRENT

Examiner

Richemond Dorvil

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

2. The drawings are objected to because Figs. 2A and 2B are not clearly understood.

Correction is required.

### *Claim Rejections - 35 USC § 101*

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 8-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter..

Claims 8-17 define non-statutory processes because they merely manipulate an abstract idea (mathematical algorithm) without a claimed limitation to a practical application. The disclosed invention has a practical application in the technological arts (e.g. Speech recognition and/or speech controlled system); however, the claimed process, a series of steps to be performed on a computer, simply manipulates an abstract idea without a claimed limitation to the practical application and does not have any post or pre-computer process activity.

A review of application 09/311,617 shows the disclosed invention thereof to be an apparatus and method for recognizing speech. This is a practical application within the

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technological arts. However, it does not disclose specific hardware, specific software, or a combination thereof for performing the claimed functions.

The functional blocks of Figures 1 and 3 represent the claimed "means recited in claim 16; however, they are described in the specification as a general purpose computer and/or blocks implementation of a mathematical algorithm, not a physical component or circuit. No more specific disclosure of the claimed "means" and/or "circuits" is set forth, i.e. no computer program, no logic circuits. The steps that formed the claimed process are devoid of any limitations to any practical application.

In the instant application the disclosure is directed to any and every structure for carrying out the claimed functions, and not solely to specific structure. Claims 8-17 reviewed in light of the specification, simply recite a mathematical algorithm for classifying models.

Claim 16 is written in means-plus-function format and for the purpose of this rejection is being treated as though it was a method claim. The courts have held that such treatment is acceptable:

"If the functionally-defined disclosed means and their equivalents are so broad that they encompass any and every means for performing the recited functions, the apparatus claim is an attempt to exalt form over substance since the claim is really to the method or series of functions itself. In computer-related inventions, the recited means often perform the functions of "number crunching" (solving mathematical algorithms and making calculations). In such cases the burden must be placed on the applicant to demonstrate that the claim is truly drawn to specific apparatus distinct from other apparatus capable of performing the identical functions."

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If this burden has not been discharged, the apparatus will be treated as if it were drawn to the method or process which encompasses all of the claimed "means." See In re Abele 214 USPQ 682, 688 (CCPA 1982); Ex parte Akamatsu, 22 USPQ 2d 1915, 1920; and Ex parte Alappat, 23 USPQ 2d 1340, 1344.

As can be seen by claims 8-17 these claims recite directly a mathematical algorithm by setting forth the step of "generating a difficulty value ...; obtaining a response ...; combining ...; applying a statistical model ...; generating a score ...").

Taking each claim as a whole, we have a data gathering step at claim 8, 14, 17, "providing a set of tasks". This limitation does not in any way further limit the algorithm because it merely is the necessary step to provide the input data needed for the algorithm. Moreover, the courts have consistently held that such mere gathering and inputting of the data necessary for the solution of the algorithm does not suffice to render the claims, when considered as a whole statutory. Arshal v. United States, 621 F.2d 421, 208 USPQ 397 (Ct. Cl. 1980), cert. den., 449 U.S. 1071 (1981), reh'g den., 450 U.S. 1050 (1981); and In re Richman, 563 F.2d 1026, 195 USPQ 340 (CCPA 1977).

If the only limitations in the claims, in addition to the mathematical algorithm, are data-gathering steps which "merely determine values for the variables used in the mathematical formulae used in making the calculations," then such antecedent steps are insufficient to change a non-statutory method of calculation into a statutory process. See In re Richman, 563 F.2d at 1030, 195 USPQ at 343; Sarker, 588 F.2d at 1335, 200 USPQ at 139 ("If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a 'process' under 101");

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Gelnovatch, 595 F.2d at 41 n.7, 201 USPQ at 145 n.7 ("Claimed step of perturbing the values of a set of process inputs (step 3), in addition to being a mathematical operation, appears to be a data gathering step"). Where the claim "presents data gathering steps not dictated by the algorithm but by other limitations which require certain antecedent steps: the claim may present statutory subject matter. Abele 684 F. 2d at 908, 214 USPQ at 687.

The above review of the claims shows that the subject matter claimed in addition to the mathematical algorithm is not sufficient on its own to render the claims as a whole statutory.

Further, a review of each claim as a whole fails to show the transformation or reduction of subject matter to a different state or thing.

Applicant should also note that claimed steps directed to, for example, speech recognition would be considered to be statutory subject matter.

It is readily apparent that when claims 8-17 are each taken as a whole, the claims are directed to the preemption of a mathematical algorithm, and thus are non-statutory.

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.

7. Claims 1-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Sturner et al., Patent No. 5,303,327.

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As per claims 1, 7, 8, 14, 18,17, Sturner et al. disclose a test system/method comprising;

A first set of task that require a subject to provide one or more spoken responses, (see abstract, lines 2-3);

A speech recognition system to receive the spoken response and provide a estimate, (see col. 3, line 64 to col. 4, line 12, col. 6, line 64);

A scoring device to convert the estimate into a score, (see col. 5, lines 4-21);

A computation device for providing a subject score based on a combination of item scores using a scoring computation model that depends upon an expected item-dependent operating characteristic of the speech recognition system, (see abstract, lines 6-13).

As per claim 2, Sturner et al. disclose a system wherein the scoring computation is based on Item Response Theory, (see col. 5, lines 36-46).

As per claim 3, Sturner et al. disclose a system wherein the speech recognition system , the scoring device and the computation device comprise software modules running on a general purpose computer, (see Fig. 1).

As per claim 4, Sturner et al. disclose a system wherein the scoring computation model is constructed from a plurality of responses provided by a number of native and non-native speakers, the plurality of responses being prompted by a second set of tasks items, (see col. 5, lines 36-39).

As per claim 5, Sturner et al. disclose a system wherein the estimate provided by the speech recognition comprises an estimate of the linguistic content of the spoken response, (see col. 5, lines 48-66).

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As per claim 6, Sturner et al. disclose a system wherein at least one task is an item selected from a group consisting of a prompt to read a sentence aloud ..., (see col. 6, lines 16-37).


As per claims 9-13, and 15, Sturner et al. disclose all the claims limitations, (see Abstract).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richemond Dorvil whose telephone number is (703) 305-9645. The examiner can normally be reached on T-F 9:30 to 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 703 308-4825. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-9508 for regular communications and (703) 308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

  
Richemond Dorvil  
Primary Examiner  
Art Unit 2641

RD  
May 5, 2001